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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/541,426	04/03/2000	Kyeong Jin Kim	8733.20102	4200

7590 03/11/2002

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EXAMINER

NGUYEN, DUNG T

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 03/11/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/541,426

Applicant(s)
Kim et al.

Examiner
Dung Nguyen

Art Unit
2871



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on Feb 6, 2002

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-56 is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-56 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)

18) ☐ Interview Summary (PTO-413) Paper No(s). _____

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

19) ☐ Notice of Informal Patent Application (PTO-152)

17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____

20) ☐ Other:

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DETAILED ACTION

Applicant's request for reconsideration of the finality of the rejection of the last Office action dated 11/06/2001 is persuasive and; therefore, the finality of that action is withdrawn.

Applicant's arguments dated 02/06/2002 have been considered but are moot in view of the new grounds of rejection.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, 7-22, 24, 26-33, 35-50, 52 and 54-56 are rejected under 35 U.S.C. 103(a) as being ^{over}anticipated by Koma, US Patent No. 5,608,556, in view of Auman et al., US Patent No. 6,139,926.

Regarding claims 1-5, 7-22, 24, 26, 29-33, 35-50, 52 and 54, Koma's figures 3, 8 and 10 disclose a multi-domain liquid crystal display (LCD) device comprising:

- a first substrates (10) and a second substrate (30) facing each other;
- a homeotropic liquid crystal layer (41);
- a plurality of gate bus lines (12), a plurality of data bus lines (20), a plurality of TFTs (15) including a gate insulator (13), a passivation layer (21), and a pixel electrode (17);

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- an electric field inducing window (control window 33b) in the pixel electrode;
- an alignment layer (23) having a pretilt angle substantially 1° (respect to normal line).

Although Koma does not disclose a photo alignment forming on at least one of the first and second substrates, Koma does disclose that the alignment layer is formed by polyimide which can be a photoalignment as shown by Auman et al. (see abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide the polyimide photo alignment film of Auman et al. by using a photo-aligning treatment such as exposing the alignment film to UV light in order to avoid electrostatic discharge caused by rubbing process (col. 2, ln. 48). Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use an alignment material selected from the group of PVCN, PSCN and CelCn based compound, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding claims 27-28 and 55-56, the modification to Koma does not disclose a negative uniaxial film or a negative biaxial film disposed on at least one substrate. One of ordinary skill in the art would have realized the desire to dispose a negative uniaxial film or a negative biaxial film on at least one substrate of an LCD device for compensating the phase difference of the direction according to viewing-angle. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to form a negative uniaxial film or a negative biaxial film on at least one substrate of an LCD device because it is a common practice

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in the art to improve contrast and/or reduce inversion, often in the same viewing areas in an LCD device.

3. Claims 6 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koma, US Patent No. 5,608,556, in view of Auman et al., US Patent No. 6,139,926 , further in view of Applicant's submitted prior art, Koma et al. .

Regarding claims 6 and 34, although Koma ('556) does not disclose the "L-shaped" TFT in the LCD device, it would have been obvious to one skill in the art to form a TFT having a "L-shaped" as evidence from the Applicant's submitted prior art, Koma et al. figure 5 since it is well known in the art in order to increase an aperture ratio of an LCD device.

4. Claims 23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koma, US Patent No. 5,608,556, in view of Auman et al., US Patent No. 6,139,926, further in view of Bos et al., US Patent No. 6,141,074.

Regarding the above claims, the modification to Koma discloses the claimed invention as described above except for the liquid crystal layer which has a positive or negative dielectric anisotropy and chiral dopants. Bos et al. do disclose a multi-domain LCD which can be formed with a positive or negative dielectric anisotropy liquid crystal layer (see Summary of the Invention). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to form a liquid crystal layer having a positive dielectric anisotropy or negative dielectric anisotropy because the use of one conventional material over another merely depends on the desire of the manufacturer (i.e., homogeneous or homeotropic alignment) and/or

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the availability and practicality of the material for the chosen manufacturing process (see Summary of the Invention).

5. Claims 51 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koma, US Patent No. 5,608,556, in view of Auman et al., US Patent No. 6,139,926, further in view of Van De Witte, US Patent No. 5,936,692.

Regarding the above claims, Koma discloses the claimed invention as described above except for the liquid crystal layer including chiral dopants. However, Van De Witte does disclose that an LCD can be included a chiral dopant (col. 2, ln. 21). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to form a chiral dopant in an LCD device as shown by Van de Witte since it is a common practice in the art to obtain a uniform twist sense (col. 2, ln. 24).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Suzuki et al. (US 6,256,082), Matsuyama et al. (US 6,300,996) disclose an LCD with a control window forming on a pixel electrode.

Auman et al. (US 6,139,926), Kwon et al. (US 6,312,875) disclose an LCD having a photo-aligned alignment film.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Dung Nguyen whose telephone number is (703) 305-0423. The fax phone number for this Group is (703) 746-7730.

Any information of a general nature or relating to the status of this application should be directed to the group receptionist whose telephone number is (703) 308-0956.

DN
03/05/2002

William L. Sikes
Supervisory Patent Examiner
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